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**From:** Davis, Eva [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D2BB073C80BE4F5482E94FFE2031042B-DAVIS, EVA]  
**Sent:** 12/6/2018 4:49:31 PM  
**To:** Dan Pope [DPope@css-inc.com]  
**Subject:** FW: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

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**From:** Davis, Eva  
**Sent:** Thursday, December 06, 2018 8:29 AM  
**To:** 'Brasaemle, Karla' <Karla.Brasaemle@TechLawInc.com>; d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>  
**Subject:** RE: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

It's pretty consistent that the upgradient pumping wells are working, but the downgradient wells are not. However, any injection going on right now should be upgradient, so sulfate distribution shouldn't be a problem now. Hydraulic containment of the benzene plume is still the concern.

When we were on site in October, we saw some of the pumps that aren't working (Carolyn – you stayed by the trailer due to the chemical odors, we saw these pumps while looking under a couple of the shelters). The system is highly corrosive and the pumps are being eaten up. They need to buy several new pumps –

Carolyn, I'm working on comments to the field variances, etc -

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**From:** Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>  
**Sent:** Tuesday, December 04, 2018 4:51 PM  
**To:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Davis, Eva <Davis.Eva@epa.gov>  
**Subject:** RE: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

Yes, that was the implicit problem underlying my questions – with all of the non-operational pumps they are not likely to have containment. Without having flow meter data, we can't tell if they are meeting their design specs for containment in wells that are pumping. My overall impression is that it is unlikely they have containment.

Karla Brasaemle, P.G.,  
TechLaw, Inc.  
415-762-0566

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**From:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>  
**Sent:** Tuesday, December 4, 2018 2:27 PM  
**To:** Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>; Davis, Eva <Davis.Eva@epa.gov>  
**Subject:** RE: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

Also, need to look up what the design flow rate was for the containment system. I thought overall it was supposed to be around 120 gpm is the number I remember though I could be off. For the wells that are pumping and they do have flow rates on it appears they aren't meeting the design specs for containment.

Carolyn d'Almeida  
Remedial Project Manager  
Federal Facilities Branch (SFD 8-1)  
US EPA Region 9 Laboratory  
1337 South 46<sup>th</sup> Street, Building 201

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*"We can evade reality, but we cannot evade the consequences of evading reality." - Ayn Rand*

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**From:** Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>  
**Sent:** Tuesday, December 4, 2018 2:14 PM  
**To:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Davis, Eva <Davis.Eva@epa.gov>  
**Subject:** RE: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

Hi Carolyn,

This raises some questions:

So if the flow meter isn't working, how do we know how much water is being pumped? Are they going to replace or repair the flow meters?

Also, if the pump isn't working are they continuing to inject sulfate in the associated injection well? (If so, we likely have uncontrolled distribution sulfate).

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**From:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>  
**Sent:** Tuesday, December 4, 2018 2:04 PM  
**To:** Davis, Eva <Davis.Eva@epa.gov>; Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>  
**Subject:** FW: 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

FYI

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**From:** Wayne Miller <Miller.Wayne@azdeg.gov>  
**Sent:** Tuesday, December 4, 2018 1:25 PM  
**To:** d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>  
**Subject:** 2018-12-4 - WAFB - FYI - ST012 GW Pumping wells 11-26-2018 - pre-EBR sulfate- sw uxo

FYI - UXO Pro, Inc. received a list of ST012 groundwater wells pumping/not pumping (work week of Nov. 26, 2018):

CZ07 7.6 gpm T = 149 F

CZ18 7.4 gpm T = 130 F

CZ-19 down

CZ-21 down

UWBZ-21 down

UWBZ-22 pumping but flow meter not working

UWBZ-26 pumping but flow meter not working T = 122 F

UWBZ-27 down

UWBZ-30 down

UWBZ-28/LSZ-51 down

LSZ-09 5.9 gpm T = 129

LSZ-11 pumping but meter not working T = 98 F

LSZ-12 3.8 gpm T = 114 F

LSZ-23 2.8 gpm T = 101 F

LSZ-28 down

LSZ-29 down

LSZ-37 3.6 gpm T = 88 F

LSZ-38 1.2 gpm T = 92 F

LSZ-39 3.0 gpm T = 80 F

Wells listed as "down" have a pump, but the pump is being repaired.

Thanks.

Wayne Miller  
Waste Programs Division,

Remedial Projects Section,  
Federal Projects Unit

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